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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,359

08/24/2006

Jean-Marc Bohlen

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HAYNES AND BOONE, LLP

IP Section

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EXAMINER

YAARY, MICHAEL D

ART UNIT

PAPER NUMBER

2193

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,359	<b>Applicant(s)</b> BOHLEN ET AL.	
	<b>Examiner</b> MICHAEL YAARY	<b>Art Unit</b> 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/24/2006 and 04/30/2007</u> .                               | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1-13 are pending in the application.

#### ***Claim Objections***

2. Claims 5-10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only--, and/or, --cannot depend from any other multiple dependent claim. See MPEP § 608.01(n).

#### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 11 is rejected under 35 U.S.C. 101 because the claim is directed to non-statutory subject matter. A computer readable medium may be interpreted to include transmission media, fiber optics, and acoustic and light waves, etc. that are generated during radio wave communications. Claims drawn to components involving signals encoded with functional descriptive material do not fall within any of the categories of statutory subject matter as set forth in 35 U.S.C. 101, and are therefore, ineligible for protection. The claim must be drawn to specifically to computer readable storage medium (i.e., RAM, ROM, etc.).

5. Claims 1 is directed to a method. However, the claim lacks either 1) being tied to another statutory class (such as a particular apparatus) or 2) transforming underlying subject matter to a different state or thing (In re Bilski).

Claims 2-11 are rejected for similar reasons as discussed for their respective parent claim1, as they fail to present any limitations that resolve the deficiencies of the claim from which they depend.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 and 8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Pajer et al (hereafter Pajer)("A method for complex interpolation of spectral segment" Journal of Magnetic Resonance, volume 21, no. 3 March 1776, pages 485-489).

Pajer was cited in the IDS filed on 08/24/2006.

8. **As to claims 1, 12, and 13**, Pajer discloses A method of enhancing spectral data, said data comprising M discrete intensity values within one of a range of

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wavelength values, a range of frequency values and a range of mass values (abstract; last paragraph of pg. 487), said method comprising:

a) applying a first function to the spectral data to obtain an inverse transform of the spectrum (pg. 486 last paragraph-pg. 487 first and second paragraph – inverse transformation),

b) zero-filling said inverse transform (pg. 487 paragraph 1 – zero extending), and

c) applying a second function to the zero-filled inverse transform to obtain a spectrum comprising N discrete intensity values within said range of wavelength, frequency or mass values, wherein  $N > M$  (Pg. 487 procedure section, all – interpolation).

9. **As to claim 2**, Pajer discloses apodizing said inverse transform, before zero filling and applying the second function (Pg. 488, resolution enhancement).

10. **As to claim 3**, Pajer discloses the second function is applied to the apodized zero-filled inverse transform (Pg. 487 procedure section, all – interpolation).

11. **As to claim 4**, Pajer discloses the inverse transform is zero-filled by a factor Z, and wherein N is Z times greater than M (pg. 487 paragraph 1 – zero extending).

12. **As to claim 8**, Pajer discloses the first function is a Fourier Transform function and second function is an inverse Fourier Transform function (pg. 485 introduction and pg. 486 theory).

13. **As to claim 9**, Pajer discloses the spectral data and spectrum are a spectrum in the frequency domain (pg. 486, lines 11-12).

14. **As to claim 10**, Pajer discloses a computer program, which when run on a computer, carries out the method (pg. 485 abstract and introduction).

15. **As to claim 11**, Pajer discloses a computer readable medium embodying the computer program of claim 10 (pg. 485 abstract and introduction).

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pajer in view of Franci et al (hereafter Franci) ("Zoom transform for mass measurement accuracy in Fourier transform mass spectrometry" Analytical Chemistry vol. 55 no 13, November 1983 pages 2094-2096).

Franci was cited in the IDS filed on 08/24/2006.

18. **As to claims 5-7**, Pajer does not explicitly disclose the spectral data comprises an atomic emission spectrum; the spectral data is in the ultra-violet, visible and/or infrared domain; and the spectral data comprises a mass spectrum.

However, Franci discloses the spectral data comprises an atomic emission spectrum; the spectral data is in the ultra-violet, visible and/or infrared domain; and the spectral data comprises a mass spectrum (Pg. 2094-2095 zoom transform and pg. 2095-2096 discussion).

19. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Pajer by implementing the FFT spectrometry as taught by Franci, for the benefit of improving mass measurement accuracy (Franci, intro).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL YAARY whose telephone number is (571)270-1249. The examiner can normally be reached on Mon-Fri 9 a.m.-5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on 571-272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. Y./

Examiner, Art Unit 2193

/Lewis A. Bullock, Jr./

Supervisory Patent Examiner, Art Unit 2193